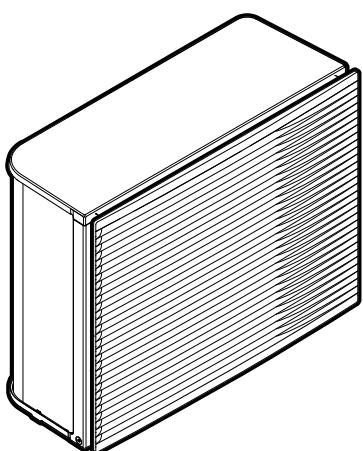




Installation manual

Daikin Altherma 3 H HT



<https://daikintechnicaldatahub.eu>



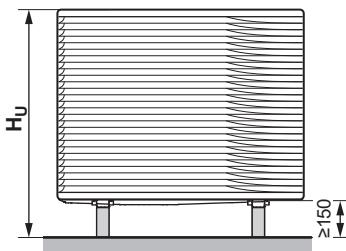
EPRA14D ▲ V3▼
EPRA16D ▲ V3▼
EPRA18D ▲ V3▼

EPRA14D ▲ W1▼
EPRA16D ▲ W1▼
EPRA18D ▲ W1▼

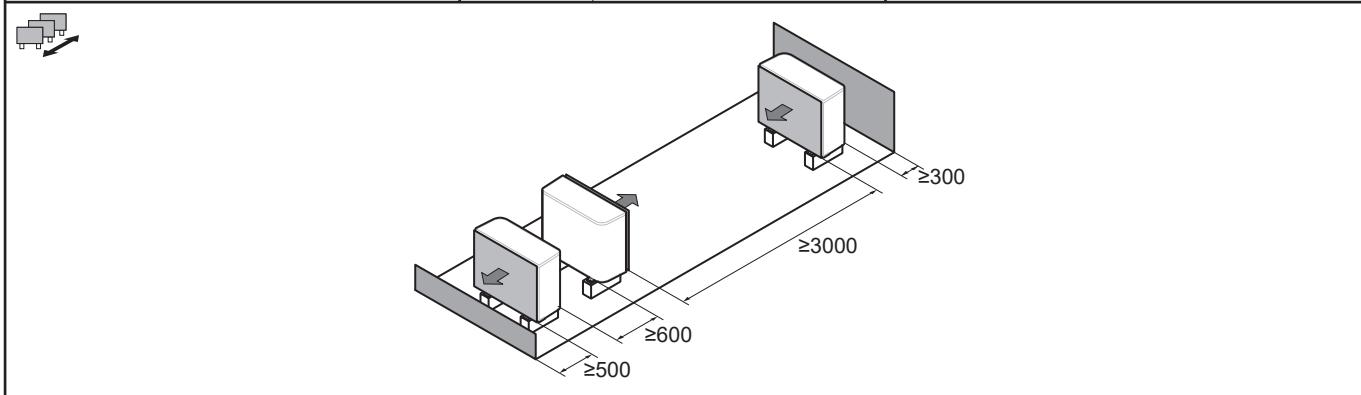
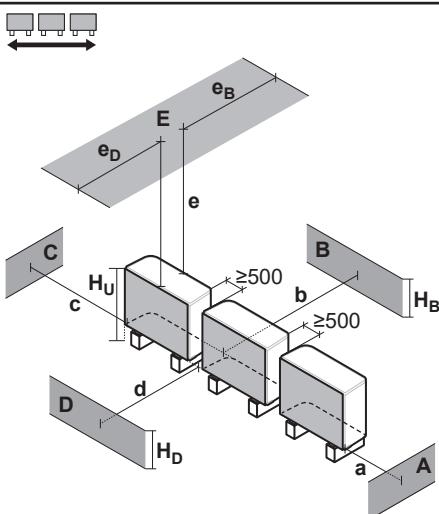
▲ = A, B, C, ..., Z
▼ = , 1, 2, 3, ..., 9

Installation manual
Daikin Altherma 3 H HT

English



A~E	H_B	H_D	H_U	(mm)						
				a	b	c	d	e	e_B	e_D
B	—				≥ 300					
A, B, C	—			≥ 500	≥ 300	≥ 100				
B, E	—				≥ 300			≥ 1000		≤ 500
A, B, C, E	—			≥ 500	≥ 300	≥ 150		≥ 1000		≤ 500
D	—						≥ 500			
D, E	—						≥ 500	≥ 1000	≤ 500	
A, C	—			≥ 500		≥ 100				
B, D	$(H_B \text{ OR } H_D) \leq H_U$				≥ 300		≥ 500			
	$(H_B \text{ AND } H_D) > H_U$							🚫		
B, D, E	$(H_B \text{ OR } H_D) \leq H_U$	$H_B > H_D$			≥ 300		≥ 1000	≥ 1000		≤ 500
					≥ 300		≥ 1000	≥ 1000	≤ 500	
	$(H_B \text{ AND } H_D) > H_U$						🚫			
A, C, D, E	—				≥ 500		≥ 150	≥ 500	≥ 1000	≤ 500
A, B, C, D, E	$(H_B \text{ OR } H_D) \leq H_U$	$H_B > H_D$			≥ 500	≥ 300	≥ 150	≥ 1000	≥ 1000	≤ 500
					≥ 500	≥ 300	≥ 150	≥ 1000	≥ 1000	≤ 500
	$(H_B \text{ AND } H_D) > H_U$						🚫			



EC – Declaration of conformity for security	UE – Deklaracija o konformnosti s provedenim po zahtjevima za sigurnost	EE – Deklaracija o konformnosti u matrici za sigurezzu	EU – Deklaracija o konformnosti i mygodnosti	EU – Deklaracija o kompatibilnosti relativa lajzgarnja
EC – Statement of compliance with requirements for safety	UE – Samsavjetovanje o skladnosti sa zahtjevima za sigurnost	EE – Izjavljanje o skladnosti sa zahtjevima za sigurnost	EU – Izjavljanje o skladnosti sa zahtjevima za sigurnost	EU – Varnostna izjava o skladnosti
EE – Declaration of conformity under security	EU – Turmaliinideudene vastuvõetuskirjeldus	EE – Deklaracija o konformnosti ja vinygoatu	EU – Deklaracija o konformnosti ja vinygoatu	EU – Deklaracija o konformnosti ja vinygoatu
EE – Declaration of conformity relating to safety	EU – Konsumentiteadurkonditõon ja lajzgarni	EE – Deklaratsioon informatsioonivõrgustikule	EU – Deklaratsioon informatsioonivõrgustikule	EU – Deklaracija o konformnosti ja vinygoatu
EE – Declaration of conformity relating to safety	EU – Samosvarstvački sekretarijat	EE – Samosvarstvački sekretarijat	EU – Samosvarstvački sekretarijat	EU – Samosvarstvački sekretarijat

07	Podobyopis, očekujouci tuo prostořivo je to množství v číslech:
08	As especificaciones de los productos que a esa declaración se aplica:
09	Показатели ожидаемого количества, к которым относится заявление:
10	Die spezifizierten Produkte, von denen die Erklärung verordnet:
11	Desuspezifikation für die Produkte, von denen die Erklärung gilt:
12	Konstruktionsklassifikation für Produkte, von denen die Erklärung gilt:
13	Ta ihloulostí očekávaného množství v číslech:
14	Spécifications des produits à une déclaration se applique:
15	Specificitá držaná za průzdroje na kterou se výzva odnosi:
16	Spécification de la quantité attendue dans les termes de l'alerte:
17	Specyfikacja konstrukcyjna produktu, który dotyczy deklaracji:
18	Spécification de la quantité attendue dans les termes de l'alerte:
19	Spécificació de la quantitat esperada en els termes de l'declaració:
20	Todt, mille kārtējais deklācijas leitīt:
21	Нормативная численность ожидаемого количества:
22	Declaración de acuerdo con la descripción de los productos auxiliares que se producen:
23	Sis deklaratsioonis avõteid alamüldum spetsifikatsioon:
24	Konstruktions-Spezifikation für Produkte, von denen die Erklärung gilt:
25	Bu bayannı ligili olduğu ürünlerin Təsdiq Özelliği:

06	Norme è indirizzo dell'Ente riconosciuto che ha la conformità alla direttiva sull'apparecchiature di pressione: <input type="checkbox"/>	07	Dovuta alla direttiva sulle Conformità dei prodotti di consumo e alle norme sui servizi: <input checked="" type="checkbox"/>
08	Nome e indirizzo del organismo notificato, che avvalutò positivamente la conformità con la direttiva sulle apparecchiature di pressione: <input checked="" type="checkbox"/>	09	Nome e indirizzo del organismo notificato, che avvalutò positivamente la conformità con la direttiva sulla sicurezza dei prodotti di consumo: <input checked="" type="checkbox"/>
10	Nome e indirizzo del Notified body che ha la conformità alla direttiva sulle apparecchiature di pressione: <input checked="" type="checkbox"/>	11	Nome e indirizzo del organismo notificato, che avvalutò positivamente la conformità con la direttiva sulla sicurezza dei prodotti di consumo: <input checked="" type="checkbox"/>
12	Nome e indirizzo del organismo notificato, che avvalutò positivamente la conformità con la direttiva sulla sicurezza dei prodotti di consumo: <input checked="" type="checkbox"/>	13	Nome e indirizzo del organismo notificato, che avvalutò positivamente la conformità con la direttiva sulla sicurezza dei prodotti di consumo: <input checked="" type="checkbox"/>
14	Navn og adresse på den myndighed der har fastlagt en positiv bekræftelse af at udstyrlet lever op til kravene i PD. Direktiv for trykbeholderes trykprøver: <input checked="" type="checkbox"/>	15	Navn og adresse for den myndighed der har fastlagt en positiv bekræftelse af at udstyrlet lever op til kravene i PD. Direktiv for trykbeholderes trykprøver: <input checked="" type="checkbox"/>
16	Navn og adresse for den myndighed der har fastlagt en positiv bekræftelse af at udstyrlet lever op til kravene i PD. Direktiv for trykbeholderes trykprøver: <input checked="" type="checkbox"/>	17	Navn og adresse for den myndighed der har fastlagt en positiv bekræftelse af at udstyrlet lever op til kravene i PD. Direktiv for trykbeholderes trykprøver: <input checked="" type="checkbox"/>
18	Deturinare și adresa organului notificat care a apreciat pozitiv conformitatea cu Directiva privind echipamentele sub presiune: <input checked="" type="checkbox"/>	19	Ime in naslov organa za upolaganje skladnosti, ki je pozitivno ocenil ustreznost z Direktivo o načini izvajanja: <input checked="" type="checkbox"/>
20	Tezavljeno organ, ki je določilo pozitivno pristojbo o usluženosti in ustreznosti za tačno uporabo: <input checked="" type="checkbox"/>	21	Huvudanstalt som har utesteggt att tillåtna utövningen av kontrollen och att utöva en teknisk inspektion: <input checked="" type="checkbox"/>
22	Avtorizirana institucija, ki je določila pozitivno skladnost in ustreznost za uporabo: <input checked="" type="checkbox"/>	23	Sentralkontoret för tryckbehållarens tryckprövning, som har utesteggt att tillåta användning av produkten och att utföra teknisk inspektion: <input checked="" type="checkbox"/>
24	Názov a adresu certifikačného úradu, ktorý kladne poistili zhodnosť, ktorá je pozitívne hodnotená: <input checked="" type="checkbox"/>	25	Başvuruların Onaylanmasında参与 eden yetkilendirme birimi: <input checked="" type="checkbox"/>
26	Spieldienst leitet es feststellen: <input checked="" type="checkbox"/> Igazolvásban tüntet ki az igazolásban gát: skat. modelle Izgatavateli izjemu piktogram	27	VINCOTTE nv Jan Olieslagerslaan 35 1800 Vilvoorde, Belgium

declares under its sole responsibility that the products to which this declaration relates:

EPRA14DAV3(7), EPRA16DAV3(7), EPRA18DAV3(7), EPRA14DAW1(7), EPRA16DAW1(7), EPRA18DAW1(7),

are in conformity with the following directive(s) or regulation(s), provided that the products are used in accordance with our instructions:

S.I. 2016/1105: Pressure Equipment (Safety) Regulations 2016**
S.I. 2016/1101: Electrical Equipment (Safety) Regulations 2016
S.I. 2016/1091: Electromagnetic Compatibility Regulations 2016*

as amended,

following the provisions of: BS EN 60335-2-40,

* as set out in **<A>** and judged positively by **** according to the **Certificate <C>**.

** as set out in the Technical Construction File **<D>** and judged positively by **<E>** (Applied module **<F>**). **<G>**. Risk category **<H>**. Also refer to next page.

<A>	DAIKIN.TCF.034C3/02-2022
	–
<C>	–
<D>	DAIKIN.TCFP.006
<E>	HPI-C-Eproof Ltd. (NB1521)
<F>	B+D
<G>	–
<H>	III

DAIKIN 
Hiromitsu Iwasaki
DAIKIN EUROPE N.V.
Director
DAIKIN Zandvoordestraat 300, B-8400 Oostende, Belgium
Ostend, 2nd of May 2022

continuation of previous page:

Design Specifications of the products to which this declaration relates:

Maximum allowable pressure (PS): $\langle K \rangle$ (bar)

* T_{Smin}: Minimum temperature at low pressure side: <L> (°C)

* Test results. See [Section 10](#) for more information concerning correlations with the minimum allowable pressure (DS).

ဒီမေးကြံရာအောင် ချမှတ်ခြင်း၊ ချမှတ်ခြင်း၊ ပုဂ္ဂန်များ၊ များ၊

Refrigerant: <N>

Setting of pressure safety device: **<P>** (bar)

卷之三

卷之三

<K>	PS	56 bar
<L>	T _{Smin}	-28 °C
<M>	T _{Smax}	70 °C
<N>		R32
<P>		56 bar

<Q> HPI-CEproof Ltd.
The Manor House
Howbery Business Park
Wallingford
OX10 8BA
United Kingdom

Name and address of the Notified body that issued nonconformity in compliance with the Procedure Equipment (Safety) Regulations: >2

HPI-CE Group Ltd.
The Manor House
Howbery Business Park
Wallingford
OX10 8BA
United Kingdom

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		▪ Publicly accessible via https://daikintechnicaldatahub.eu .
		▪ Heating Solutions Navigator
		▪ Digital toolbox that offers a variety of tools to facilitate the installation and configuration of heating systems.
		▪ To access Heating Solutions Navigator, registration to the Stand By Me platform is required. For more information, see https://professional.standbyme.daikin.eu .
		▪ Daikin e-Care
		▪ Mobile app for installers and service technicians that allows you to register, configure and troubleshoot heating systems.
		▪ The mobile app can be downloaded for iOS and Android devices using the QR codes below. Registration to the Stand By Me platform is required to access the app.



1 About this document

Target audience

Authorised installers

Documentation set

This document is part of a documentation set. The complete set consists of:

▪ General safety precautions:

- Safety instructions that you must read before installing
- Format: Paper (in the box of the indoor unit)

▪ Operation manual:

- Quick guide for basic usage
- Format: Paper (in the box of the indoor unit)

2 Specific installer safety instructions

2 Specific installer safety instructions

Always observe the following safety instructions and regulations.

Installation site (see "4.1 Preparing the installation site" [▶ 9])



WARNING

Follow the service space dimensions in this manual for correct installation of the unit. See "4.1.1 Installation site requirements of the outdoor unit" [▶ 9].

Piping installation (see "5 Piping installation" [▶ 14])



WARNING

Field piping method MUST be in accordance with the instructions from this manual. See "5 Piping installation" [▶ 14].

In case of freeze protection by glycol:



WARNING

Ethylene glycol is toxic.



WARNING

Due to the presence of glycol, corrosion of the system is possible. Uninhibited glycol will turn acidic under the influence of oxygen. This process is accelerated by the presence of copper and high temperatures. The acidic uninhibited glycol attacks metal surfaces and forms galvanic corrosion cells that cause severe damage to the system. Therefore it is important that:

- the water treatment is correctly executed by a qualified water specialist,
- a glycol with corrosion inhibitors is selected to counteract acids formed by the oxidation of glycols,
- no automotive glycol is used because their corrosion inhibitors have a limited lifetime and contain silicates which can foul or plug the system,
- galvanized pipes are NOT used in glycol systems since the presence may lead to the precipitation of certain components in the glycol's corrosion inhibitor.

Electrical installation (see "6 Electrical installation" [▶ 16])



DANGER: RISK OF ELECTROCUTION



WARNING

Electrical wiring connection method MUST be in accordance with the instructions from:

- This manual. See "6 Electrical installation" [▶ 16].
- The wiring diagram, which is delivered with the unit, located at the inside of the service cover. For a translation of its legend, see "8.2 Wiring diagram: Outdoor unit" [▶ 22].



WARNING

- All wiring MUST be performed by an authorised electrician and MUST comply with the applicable legislation.

- Make electrical connections to the fixed wiring.
- All components procured on-site and all electrical construction MUST comply with the applicable legislation.



WARNING

Rotating fan. Before powering ON or servicing the outdoor unit, make sure that the discharge grille covers the fan as protection against a rotating fan. See:

- "4.4 To install the discharge grille" [▶ 11]
- "4.5 To remove the discharge grille, and put the grille in safety position" [▶ 12]



WARNING

ALWAYS use multicore cable for power supply cables.



CAUTION

Do NOT push or place redundant cable length in the unit.

**WARNING**

- If the power supply has a missing or wrong N-phase, equipment might break down.
- Establish proper earthing. Do NOT earth the unit to a utility pipe, surge absorber, or telephone earth. Incomplete earthing may cause electrical shock.
- Install the required fuses or circuit breakers. See "6.2 Specifications of standard wiring components" [▶ 16].
- Secure the electrical wiring with cable ties so that the cables do NOT come in contact with sharp edges or piping, particularly on the high-pressure side.
- Do NOT use taped wires, stranded conductor wires, extension cords, or connections from a star system. They can cause overheating, electrical shock or fire.
- Do NOT install a phase advancing capacitor, because this unit is equipped with an inverter. A phase advancing capacitor will reduce performance and may cause accidents.

**WARNING**

If the supply cord is damaged, it MUST be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

**INFORMATION**

Details of type and rating of fuses, or rating of circuit breakers are described in "6 Electrical installation" [▶ 16].

a O-ring for drain socket

b Drain socket

c Shut-off valve (with integrated filter)

d Thermistor fixture (for installations in areas with low ambient temperatures)

e Compressor cover piece

f Installation manual – Outdoor unit

g Disposal manual – Recovering refrigerant

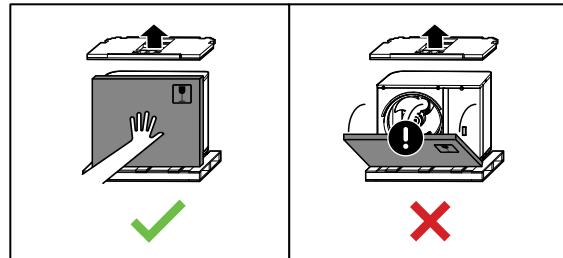
h Energy label

i Discharge grille (upper + lower part)

j Installation manual – Discharge grille

**NOTICE**

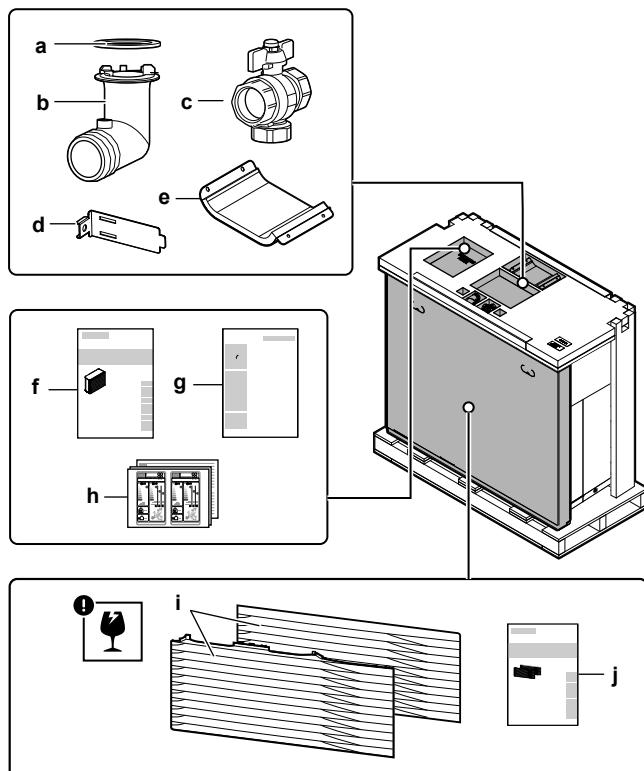
Unpacking. When you remove the top packaging/accessories, hold the box containing the discharge grille to prevent it from falling.



3 About the box

3.1 Outdoor unit

3.1.1 To remove the accessories from the outdoor unit



4 Unit installation

4.1 Preparing the installation site

**WARNING**

The appliance shall be stored in a room without continuously operating ignition sources (example: open flames, an operating gas appliance or an operating electric heater).

4.1.1 Installation site requirements of the outdoor unit

Mind the spacing guidelines. See figure 1 on the inside of the front cover.

**NOTICE**

Cascading outdoor units. The installation layouts with multiple outdoor units shown in (side to side) and (front to back / back to front) are only allowed in combination with wall-mounted indoor units, NOT in combination with floor-standing indoor units.

The symbols can be interpreted as follows:

A, C Right side and left side obstacles (walls/baffle plates)
B Suction side obstacle (wall/baffle plate)

D Discharge side obstacle (wall/baffle plate)

E Top side obstacle (roof)

a,b,c,d,e Minimum service space between the unit and obstacles

A, B, C and E

e_B Maximum distance between the unit and the edge of obstacle E, in the direction of obstacle B

e_D Maximum distance between the unit and the edge of obstacle E, in the direction of obstacle D

H_U Height of the unit including the installation structure

H_B, H_D Height of obstacles B and D

Not allowed

The outdoor unit is designed for outdoor installation only, and for the following ambient temperatures:

Cooling mode	10~43°C
Heating mode	-28~35°C

4 Unit installation

Special requirements for R32

The outdoor unit contains an internal refrigerant circuit (R32), but you do NOT have to do any refrigerant field piping, or refrigerant charging.

Mind the following requirements and precautions:



WARNING

- Do NOT pierce or burn refrigerant cycle parts.
- Do NOT use means to accelerate the defrosting process or to clean the equipment, other than those recommended by the manufacturer.
- Be aware that R32 refrigerant does NOT contain an odour.



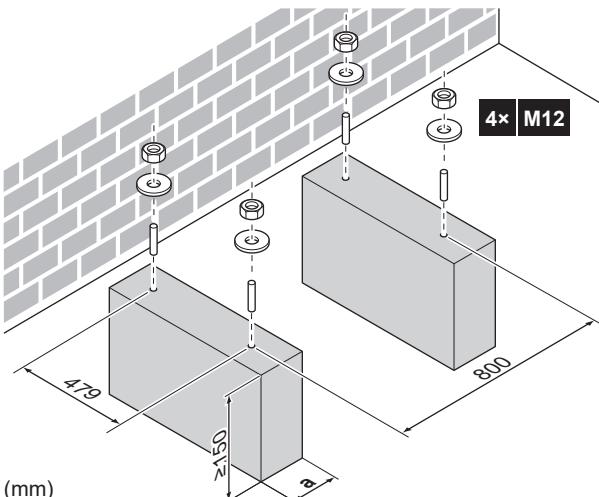
WARNING

The appliance shall be stored so as to prevent mechanical damage and in a well-ventilated room without continuously operating ignition sources (example: open flames, an operating gas appliance or an operating electric heater).



WARNING

Make sure installation, servicing, maintenance and repair comply with instructions from Daikin and with applicable legislation and are executed ONLY by authorised persons.



- a Make sure not to cover the drain hole in the bottom plate of the unit.

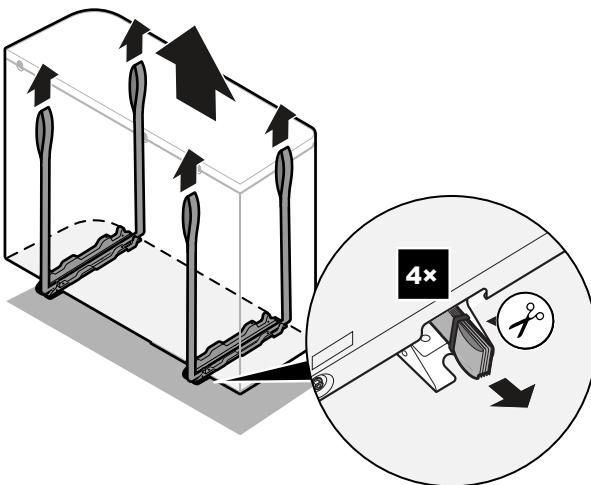
4.2.2 To install the outdoor unit



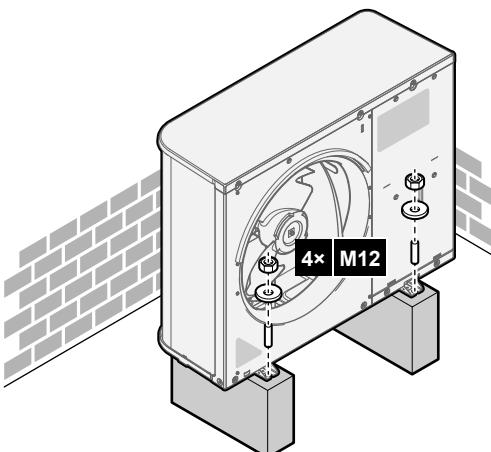
CAUTION

To avoid injury, do NOT touch the air inlet or aluminium fins of the unit.

- 1 Carry the unit by its slings, and put it onto the installation structure.

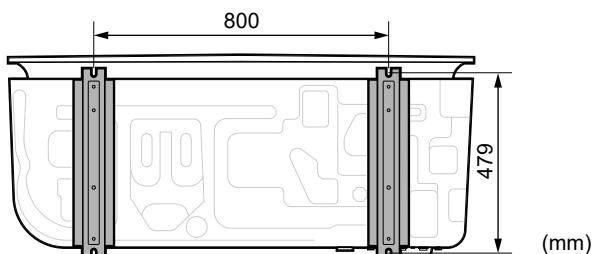


- 2 Fix the unit to the installation structure.



Use 4 sets of M12 anchor bolts, nuts and washers. Provide at least 150 mm of free space below the unit. Additionally, make sure the unit is positioned at least 100 mm above the maximum expected level of snow.

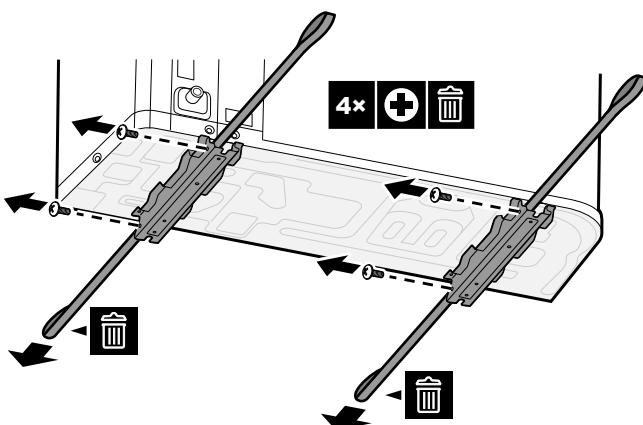
Anchor points



Pedestal

When installing on a pedestal, make sure that the discharge grille still can be put in its safety position. See "4.5 To remove the discharge grille, and put the grille in safety position" [▶ 12].

- 3 Remove the slings (and screws), and dispose of them.



4.2.3 To provide drainage

Make sure that condensation water can be evacuated properly.

! NOTICE

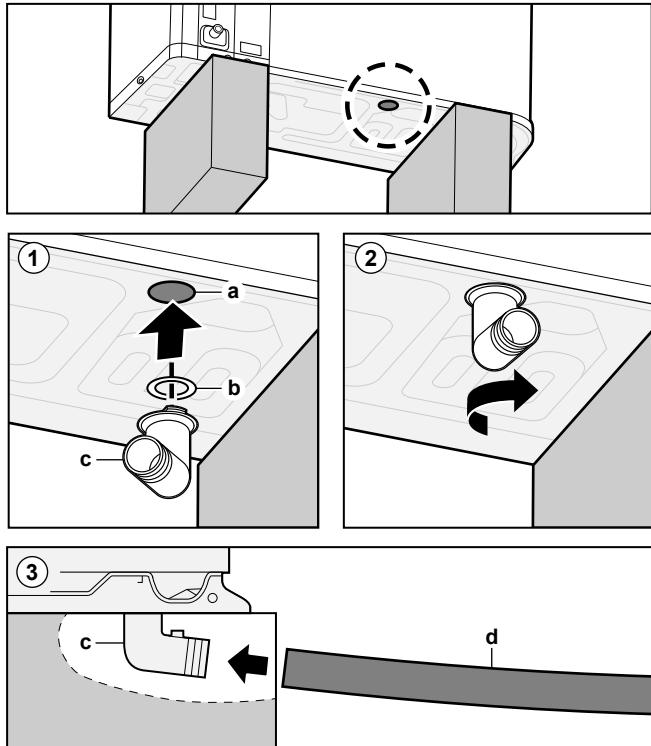
If the unit is installed in a cold climate, take adequate measures so that the evacuated condensate CANNOT freeze. We recommend to do the following:

- Insulate the drain hose.
- Install a drain tube heater (field supply). To connect the drain tube heater, see "6.4.1 To connect the electrical wiring to the outdoor unit" [▶ 16].

! NOTICE

Provide at least 150 mm of free space below the unit. Additionally, make sure the unit is positioned at least 100 mm above the expected level of snow.

Use the drain plug (with O-ring) and a hose for drainage.



- a Drain hole
- b O-ring (delivered as accessory)
- c Drain plug (delivered as accessory)
- d Hose (field supply)

! NOTICE

O-ring. Make sure the O-ring is installed correctly to prevent leakage.

4.3 Opening and closing the unit

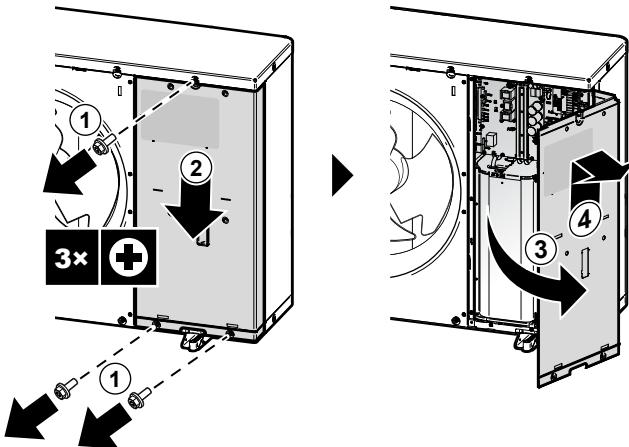
4.3.1 To open the outdoor unit



DANGER: RISK OF ELECTROCUTION



DANGER: RISK OF BURNING/SCALDING

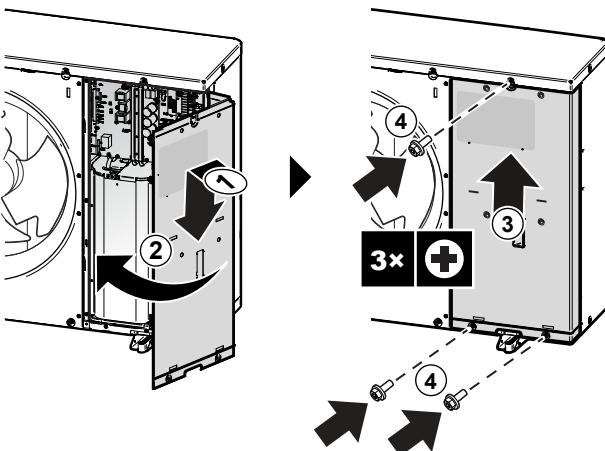


4.3.2 To close the outdoor unit



NOTICE

When closing the outdoor unit cover, make sure that the tightening torque does NOT exceed 4.1 N·m.

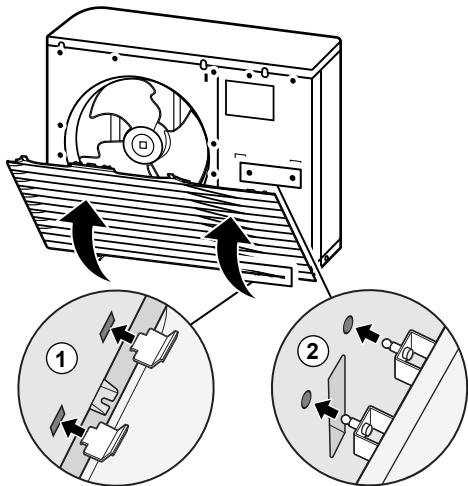


4.4 To install the discharge grille

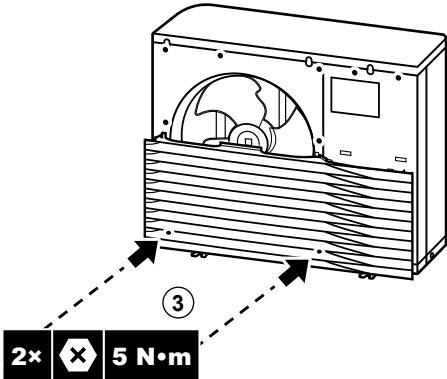
Install the lower part of the discharge grille

- 1 Insert the hooks.
- 2 Insert the ball studs.

4 Unit installation



3 Fix the 2 lower screws.



Install the upper part of the discharge grille



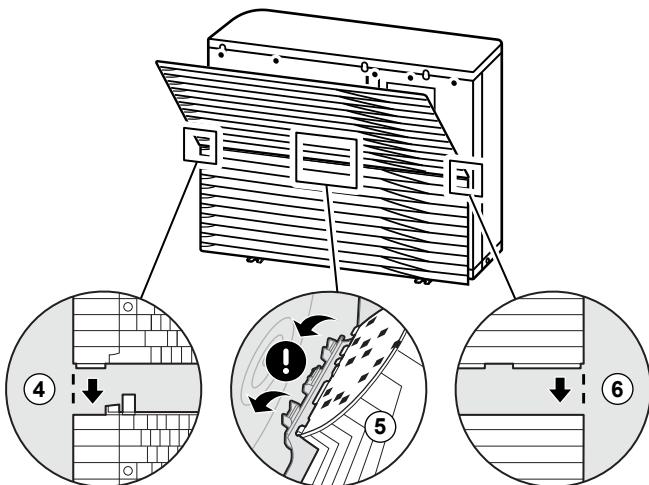
NOTICE

Vibrations. Make sure the upper part of the discharge grille is attached seamlessly to the lower part to prevent vibrations.

4 Align and attach the left side.

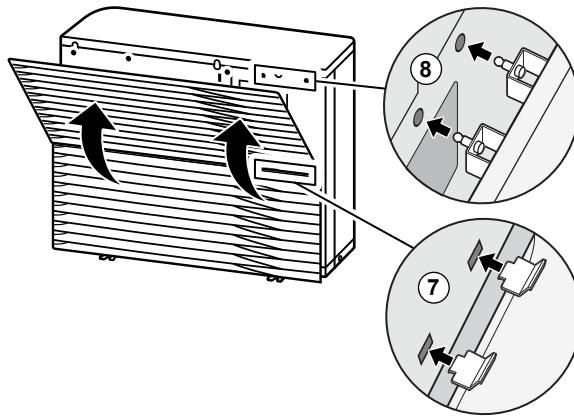
5 Align and attach the middle part.

6 Align and attach the right side.

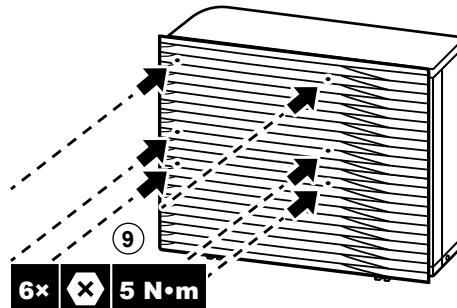


7 Insert the hooks.

8 Insert the ball studs.



9 Fix the 6 remaining screws.



4.5 To remove the discharge grille, and put the grille in safety position

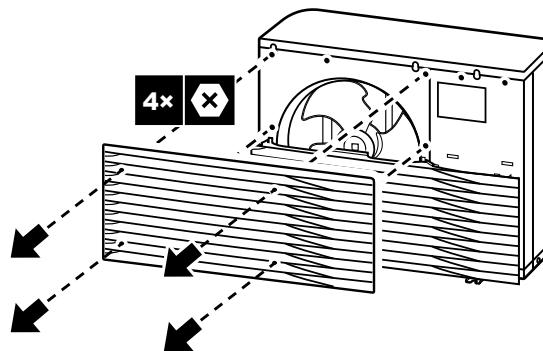


WARNING

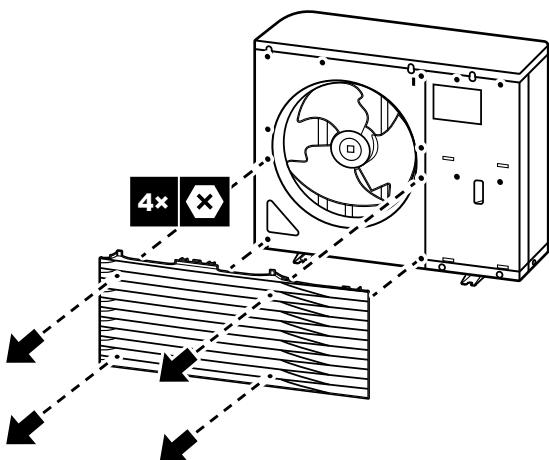
Rotating fan. Before powering ON or servicing the outdoor unit, make sure that the discharge grille covers the fan as protection against a rotating fan. See:

- "4.4 To install the discharge grille" [▶ 11]
- "4.5 To remove the discharge grille, and put the grille in safety position" [▶ 12]

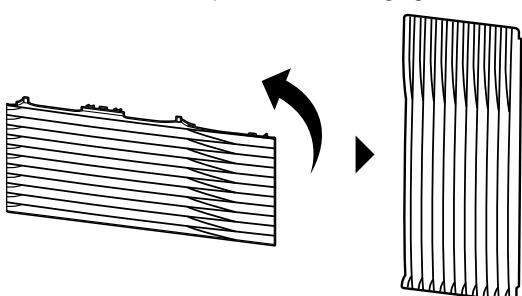
1 Remove the upper part of the discharge grille.



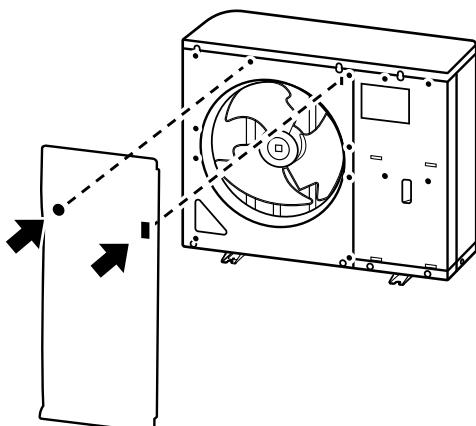
2 Remove the lower part of the discharge grille.



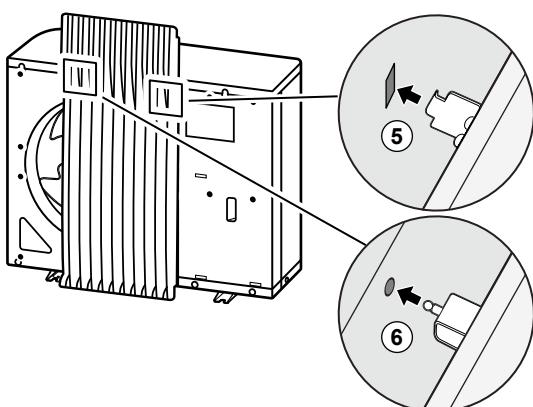
- 3 Rotate the lower part of the discharge grille.



- 4 Align the ball stud and hook on the grille with their counterparts on the unit.



- 5 Insert the hook.
6 Insert the ball stud.

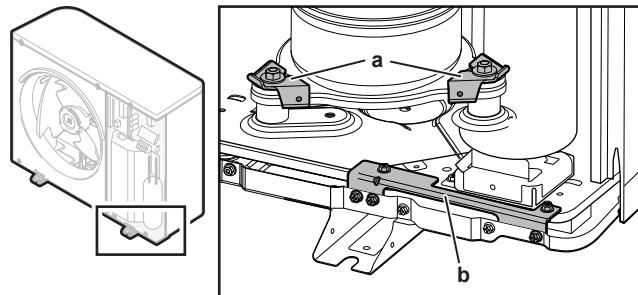


4.6 To remove the transportation stay

NOTICE

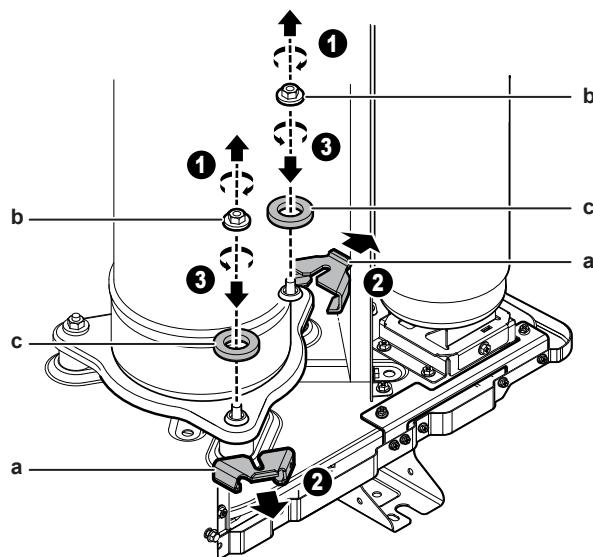
If the unit is operated with the transportation stay attached, abnormal vibration or noise may be generated.

The transportation stays protect the unit during transport. During installation they must be removed.



a Transportation stays (2x) and washers (2x)
b Transportation stay (1x)

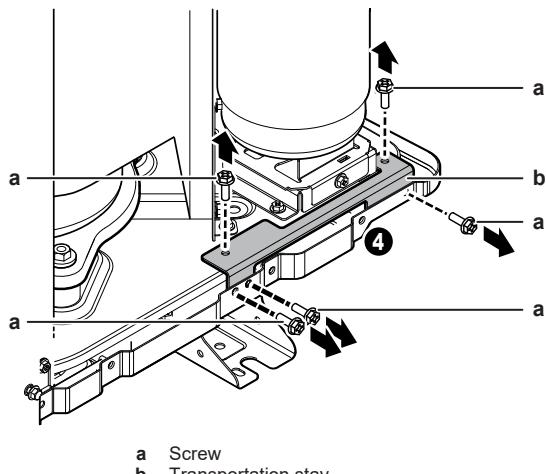
Prerequisite: Open the switch box cover. See "[4.3.1 To open the outdoor unit](#)" [▶ 11].



a Transportation stay
b Nut
c Washer

- 1 Remove the nut (b) and washer (c) from both transportation stays (a).
- 2 Remove and discard the washers (c) and transportation stays (a).
- 3 Re-install the nuts (b) of the compressor mounting bolt and tighten to 10.1 N·m of torque.

5 Piping installation



a Screw
b Transportation stay

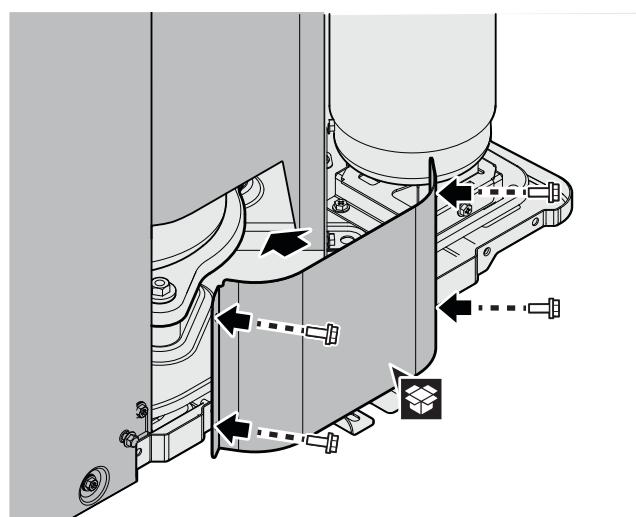
- 4 Remove the screws (a) (5x) from the transportation stay (b). Put 4 screws (a) aside for later use (see "4.7 To attach the compressor cover piece" [▶ 14]).
- 5 Remove and discard the transportation stay (b).

4.7 To attach the compressor cover piece

Required accessory (delivered with the unit):

	Compressor cover piece
--	------------------------

- 1 Put the compressor cover piece on its place. Use the screws (4x) of the transportation stay to fix it (see "4.6 To remove the transportation stay" [▶ 13]).



5 Piping installation

5.1 Connecting water piping

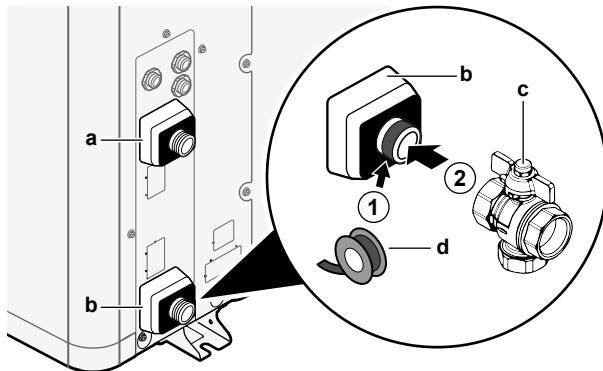
5.1.1 To connect the water piping



NOTICE

Do NOT use excessive force when connecting the field piping and make sure the piping is aligned properly. Deformation of the piping can cause malfunctioning of the unit.

- 1 Connect the shut-off valve (with integrated filter) to the outdoor unit water inlet, using thread sealant.



a Water OUT (screw connection, male, 1")
b Water IN (screw connection, male, 1")
c Shut-off valve with integrated filter (delivered as accessory)(2x screw connection, female, 1")
d Thread sealant

- 2 Connect the field piping to the shut-off valve.
- 3 Connect the field piping to the outdoor unit water outlet.



NOTICE

About the shut-off valve with integrated filter (delivered as accessory):

- The installation of the valve at the water inlet is mandatory.
- Mind the flow direction of the valve.



NOTICE

Install air purge valves at all local high points.

5.1.2 To fill the water circuit

See the installation manual of the indoor unit, or the installer reference guide.

5.1.3 To protect the water circuit against freezing

About freeze protection

Frost can damage the system. To prevent the hydraulic components from freezing, the software is equipped with special frost protection functions such as water pipe freeze prevention and drain prevention (see the installer reference guide) that include the activation of pump in case of low temperatures.

However, in case of a power failure, these functions cannot guarantee protection.

Do one of the following to protect the water circuit against freezing:

- Add glycol to the water. Glycol lowers the freezing point of the water.
- Install freeze protection valves. Freeze protection valves drain the water from the system before it can freeze. Insulate the freeze protection valves in a similar way as the water piping, but do NOT insulate the inlet and outlet (release) of these valves.



NOTICE

If you add glycol to the water, do NOT install freeze protection valves. **Possible consequence:** Glycol leaking out of the freeze protection valves.

Freeze protection by glycol

About freeze protection by glycol

Adding glycol to the water lowers the freezing point of water.



WARNING

Ethylene glycol is toxic.



WARNING

Due to the presence of glycol, corrosion of the system is possible. Uninhibited glycol will turn acidic under the influence of oxygen. This process is accelerated by the presence of copper and high temperatures. The acidic uninhibited glycol attacks metal surfaces and forms galvanic corrosion cells that cause severe damage to the system. Therefore it is important that:

- the water treatment is correctly executed by a qualified water specialist,
- a glycol with corrosion inhibitors is selected to counteract acids formed by the oxidation of glycols,
- no automotive glycol is used because their corrosion inhibitors have a limited lifetime and contain silicates which can foul or plug the system,
- galvanized pipes are NOT used in glycol systems since the presence may lead to the precipitation of certain components in the glycol's corrosion inhibitor.



NOTICE

Glycol absorbs water from its environment. Therefore do NOT add glycol that has been exposed to air. Leaving the cap off the glycol container causes the concentration of water to increase. The glycol concentration is then lower than assumed. As a result, the hydraulic components might freeze up after all. Take preventive actions to ensure a minimal exposure of the glycol to air.

Types of glycol

The types of glycol that can be used depend on whether the system contains a domestic hot water tank:

If...	Then...
The system contains a domestic hot water tank	Only use propylene glycol ^(a)
The system does NOT contain a domestic hot water tank	You can use either propylene glycol ^(a) or ethylene glycol

^(a) Propylene glycol, including the necessary inhibitors, classified as Category III according to EN1717.

Required concentration of glycol

The required concentration of glycol depends on the lowest expected outdoor temperature, and on whether you want to protect the system from bursting or from freezing. To prevent the system from freezing, more glycol is required.

Add glycol according to the table below.

Lowest expected outdoor temperature	Prevent from bursting	Prevent from freezing
-5°C	10%	15%
-10°C	15%	25%
-15°C	20%	35%
-20°C	25%	—
-25°C	30%	—
-30°C	35%	—



INFORMATION

- Protection against bursting: the glycol will prevent the piping from bursting, but NOT the liquid inside the piping from freezing.
- Protection against freezing: the glycol will prevent the liquid inside the piping from freezing.



NOTICE

- The required concentration might differ depending on the type of glycol. ALWAYS compare the requirements from the table above with the specifications provided by the glycol manufacturer. If necessary, meet the requirements set by the glycol manufacturer.
- The added concentration of glycol should NEVER exceed 35%.
- If the liquid in the system is frozen, the pump will NOT be able to start. Mind that if you only prevent the system from bursting, the liquid inside might still freeze.
- When water is at standstill inside the system, the system is very likely to freeze and get damaged.

Glycol and the maximum allowed water volume

Adding glycol to the water circuit reduces the maximum allowed water volume of the system. For more information, see the installer reference guide (topic "To check the water volume and flow rate").

Glycol setting



NOTICE

If glycol is present in the system, setting [E-0D] must be set to 1. If the glycol setting is NOT set correctly, the liquid inside the piping can freeze.

Freeze protection by freeze protection valves

About freeze protection valves

When no glycol is added to the water, you can use freeze protection valves to drain the water from the system before it can freeze.

- Install freeze protection valves (field supply) at all lowest points of the field piping.
- Normally closed valves (located indoors near the piping entry/exit points) can prevent that all water from indoor piping is drained when the freeze protection valves open.



NOTICE

When freeze protection valves are installed, set the minimum cooling setpoint (default=7°C) at least 2°C higher than the maximum opening temperature of the freeze protection valve. If lower, freeze protection valves can open during cooling operation.

For more information, see the installer reference guide.

5.1.4 To insulate the water piping

The piping in the complete water circuit MUST be insulated to prevent condensation during cooling operation and reduction of the heating and cooling capacity.

Outdoor water piping insulation



NOTICE

Outside piping. Make sure the outside piping is insulated as instructed to protect against hazards.

For piping in free air, it is recommended to use the insulation thickness as shown in below table as a minimum (with $\lambda=0.039 \text{ W/mK}$).

6 Electrical installation

Piping length (m)	Minimum insulation thickness (mm)
<20	19
20~30	32
30~40	40
40~50	50

For other cases the minimum insulation thickness can be determined using the Hydronic Piping Calculation tool.

The Hydronic Piping Calculation tool also calculates the maximum hydronic piping length from the indoor unit to the outdoor unit based on the emitter pressure drop or the other way around.

The Hydronic Piping Calculation tool is part of the Heating Solutions Navigator which can be reached via <https://professional.standbyme.daikin.eu>.

Please contact your dealer if you have no access to Heating Solutions Navigator.

This recommendation ensures good operation of the unit, however, local regulations may differ and shall be followed.

6 Electrical installation

DANGER: RISK OF ELECTROCUTION	
WARNING	
	Rotating fan. Before powering ON or servicing the outdoor unit, make sure that the discharge grille covers the fan as protection against a rotating fan. See: <ul style="list-style-type: none"> "4.4 To install the discharge grille" [▶ 11] "4.5 To remove the discharge grille, and put the grille in safety position" [▶ 12]
WARNING	
	ALWAYS use multicore cable for power supply cables.
CAUTION	
	Do NOT push or place redundant cable length in the unit.
NOTICE	
	The distance between the high voltage and low voltage cables should be at least 50 mm.

6.1 About electrical compliance

Only for EPRA14~18DAV3*

Equipment complying with EN/IEC 61000-3-12 (European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current >16 A and ≤75 A per phase.).

6.2 Specifications of standard wiring components

Component	V3	W1
Power supply cable	MCA ^(a)	30.7 A
	Voltage range	220~240 V
	Phase	1~
	Frequency	50 Hz
	Wire sizes	Must comply with applicable legislation

Component	V3	W1
Interconnection cables	Minimum cable section of 1.5 mm ² and applicable for 230 V	
Recommended field fuse	32 A, C curve	16 A or 20 A, C curve
Earth leakage circuit breaker	30 mA – Must comply with applicable legislation	

^(a) MCA=Minimum circuit ampacity. Stated values are maximum values (see electrical data of combination with indoor units for exact values).

6.3 Guidelines when connecting the electrical wiring

Tightening torques

Outdoor unit:

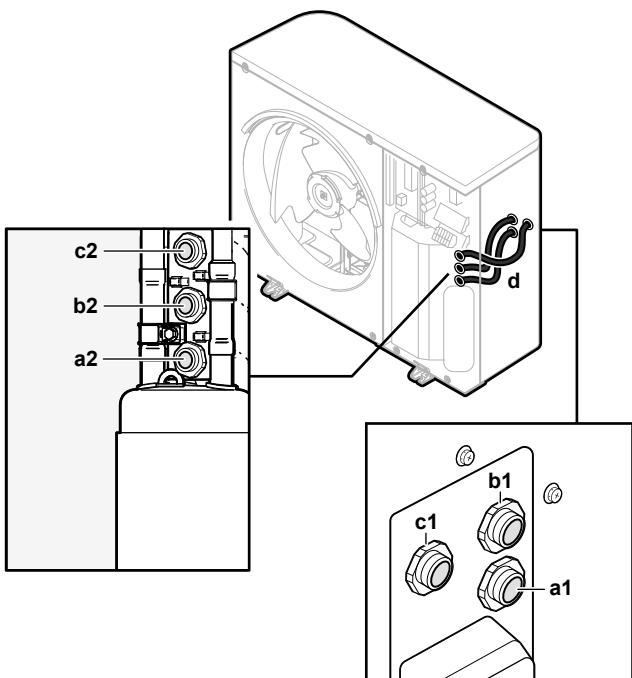
Item	Tightening torque (N·m)
X1M	1.47 ±10%
X2M	
M4 (earth)	

6.4 Connections to the outdoor unit

Item	Description
Power supply cable	See "6.4.1 To connect the electrical wiring to the outdoor unit" [▶ 16].
Interconnection cable	
Drain tube heater cable	
Connection for power saving function (only for V3 models)	
Air thermistor cable	See "6.4.2 To reposition the air thermistor on the outdoor unit" [▶ 19].

6.4.1 To connect the electrical wiring to the outdoor unit

- Open the switch box cover. See "4.3.1 To open the outdoor unit" [▶ 11].
- Insert the cables at the back of the unit, and route them through the factory-mounted cable sleeves into the switch box.



- a1+a2** Power supply cable (field supply)
b1+b2 Interconnection cable (field supply)
c1+c2 (optional) Drain tube heater cable (field supply)
d Cable sleeves (factory-mounted)

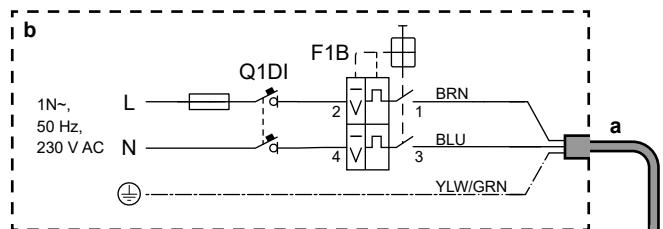
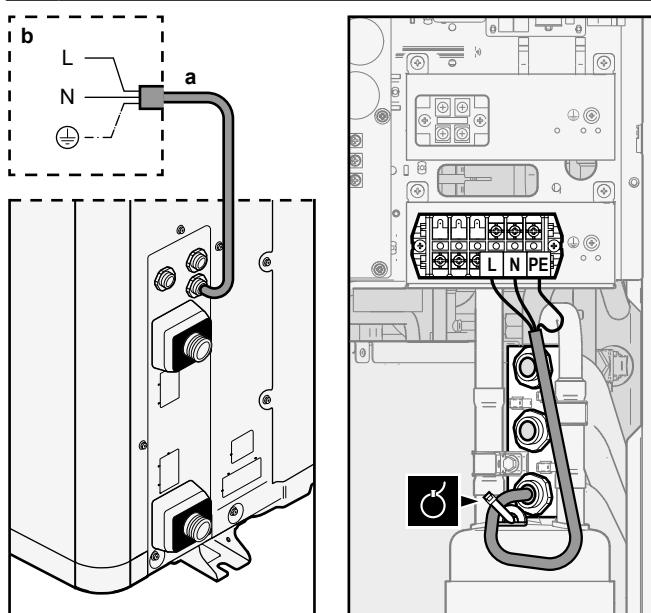
- 3 Inside the switch box, connect the wires to the appropriate terminals, and fix the cables with cable ties. See:
- "In case of V3 models" [▶ 17]
 - "In case of W1 models" [▶ 18]

In case of V3 models

1 Power supply cable:

- Route the cable through the frame.
- Connect the wires to the terminal block.
- Fix the cable with a cable tie.

	Wires: 1N+GND
	Maximum running current: Refer to name plate on unit.

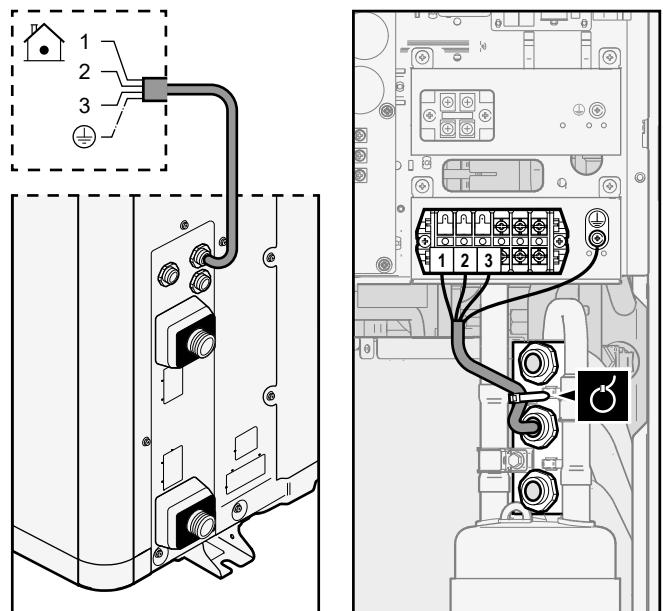


- a** Power supply cable (field supply)
b Field wiring
F1B Overcurrent fuse (field supply). Recommended fuse: 2 pole, 32 A fuse, C curve.
Q1DI Earth leakage circuit breaker (30 mA)(field supply)

2 Interconnection cable (indoor↔outdoor):

- Route the cable through the frame.
- Connect the wires to the terminal block (make sure the numbers match with the numbers on the indoor unit) and the earth screw.
- Fix the cable with a cable tie.

	Wires: (3+GND)×1.5 mm ²
	—

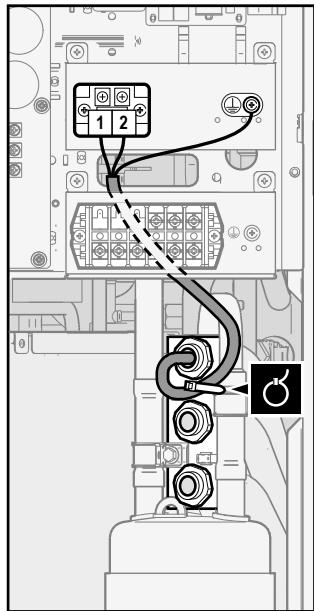
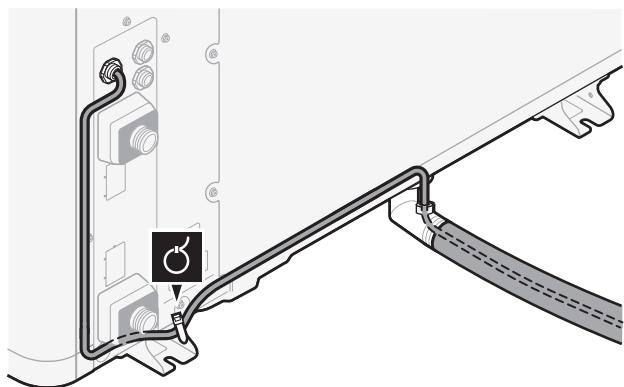


3 (Optional) Drain tube heater cable:

- Make sure the heating element of the drain tube heater is completely inside the drain tube.
- Route the cable through the frame.
- Connect the wires to the terminal block and the earth screw.
- Fix the cable with cable ties.

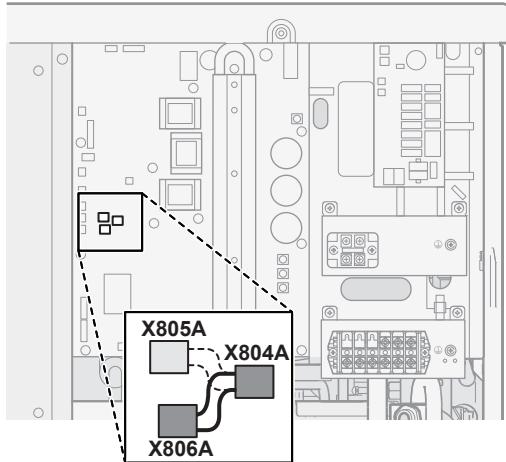
	Wires: (2+GND)×0.75 mm ² . Wiring must be double insulated.
	Maximum power allowed for drain tube heater = 115 W (0.5 A)

6 Electrical installation



4 (Optional) Power saving function: If you want to use the power saving function:

- Disconnect X804A from X805A.
- Connect X804A to X806A.



INFORMATION

Power saving function. The power saving function is only applicable for V3 models. For more information about the power saving function ([9.F] or overview field setting [E-08]), see the installer reference guide.

In case of W1 models

1 Power supply cable:

- Route the cable through the frame.
- Connect the wires to the terminal block.
- Fix the cable with a cable tie.

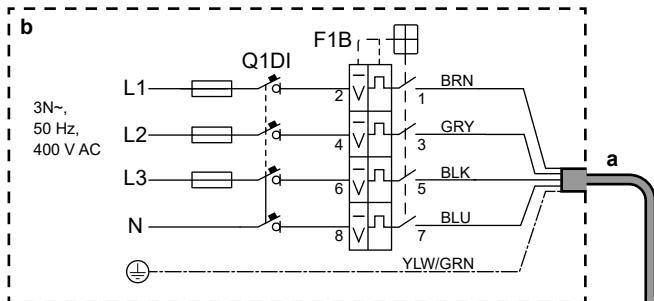
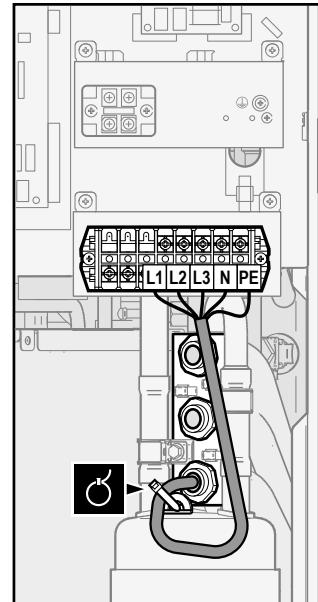
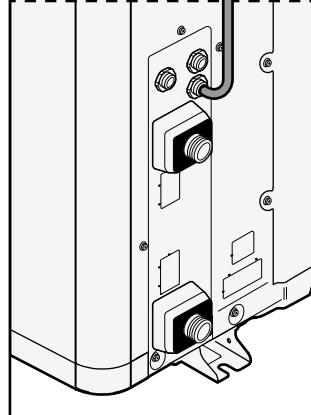
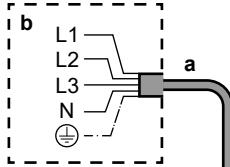


Wires: 3N+GND

Maximum running current: Refer to name plate on unit.



—



a Power supply cable (field supply)

b Field wiring

F1B Overcurrent fuse (field supply). Recommended fuse: 4 pole, 16 A or 20 A fuse, C curve.

Q1DI Earth leakage circuit breaker (30 mA)(field supply)

2 Interconnection cable (indoor↔outdoor):

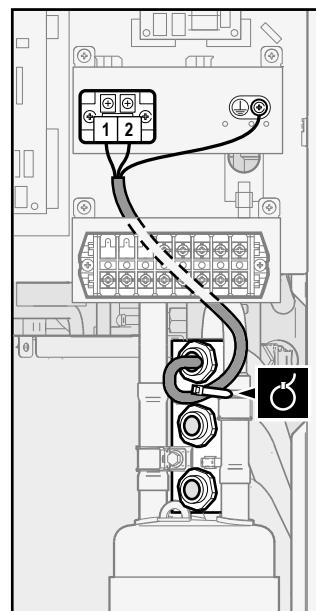
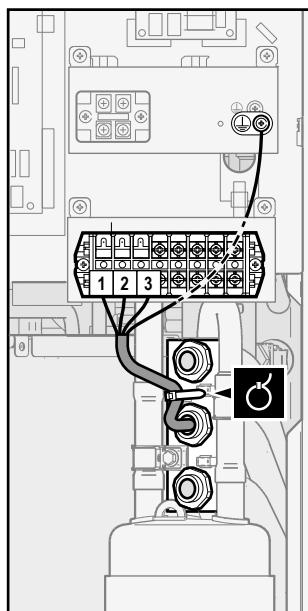
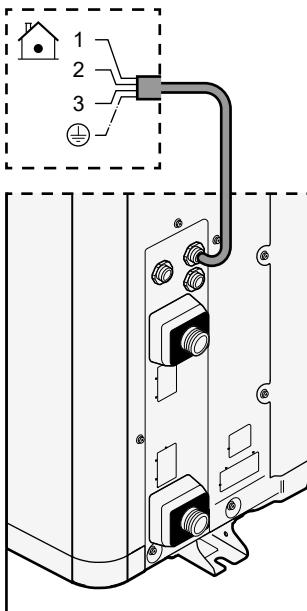
- Route the cable through the frame.
- Connect the wires to the terminal block (make sure the numbers match with the numbers on the indoor unit) and the earth screw.
- Fix the cable with a cable tie.



Wires: (3+GND)×1.5 mm²



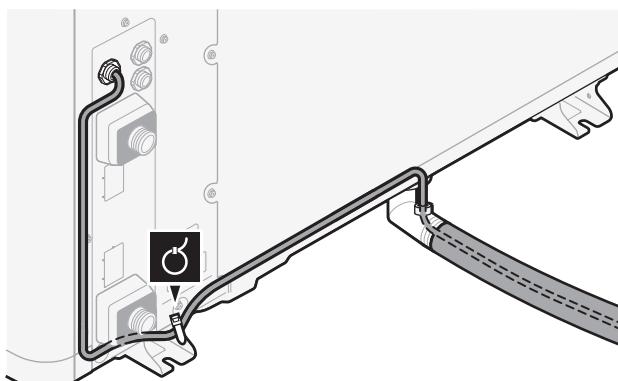
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3 (Optional) Drain tube heater cable:

- Make sure the heating element of the drain tube heater is completely inside the drain tube.
- Route the cable through the frame.
- Connect the wires to the terminal block and the earth screw.
- Fix the cable with cable ties.

	Wires: (2+GND)×0.75 mm ² . Wiring must be double insulated. Maximum power allowed for drain tube heater = 115 W (0.5 A)
	—

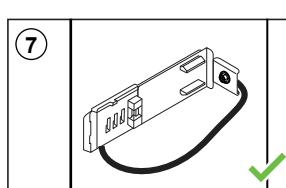
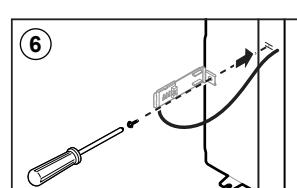
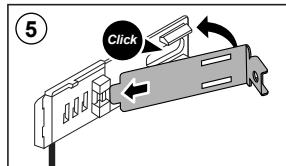
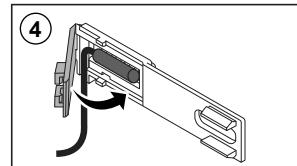
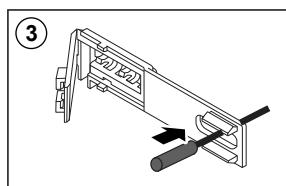
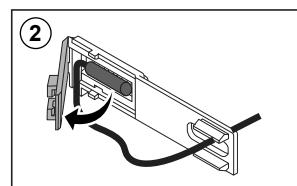
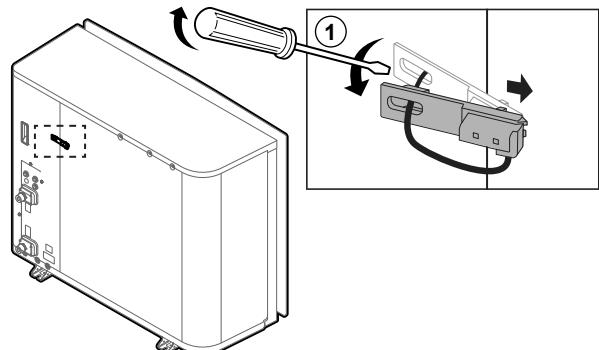


6.4.2 To reposition the air thermistor on the outdoor unit

This procedure is only necessary in areas with low ambient temperatures.

Required accessory (delivered with the unit):

	Thermistor fixture.
--	---------------------



7 Starting up the outdoor unit

7 Starting up the outdoor unit

See the indoor unit installation manual for configuration and commissioning of the system.



WARNING

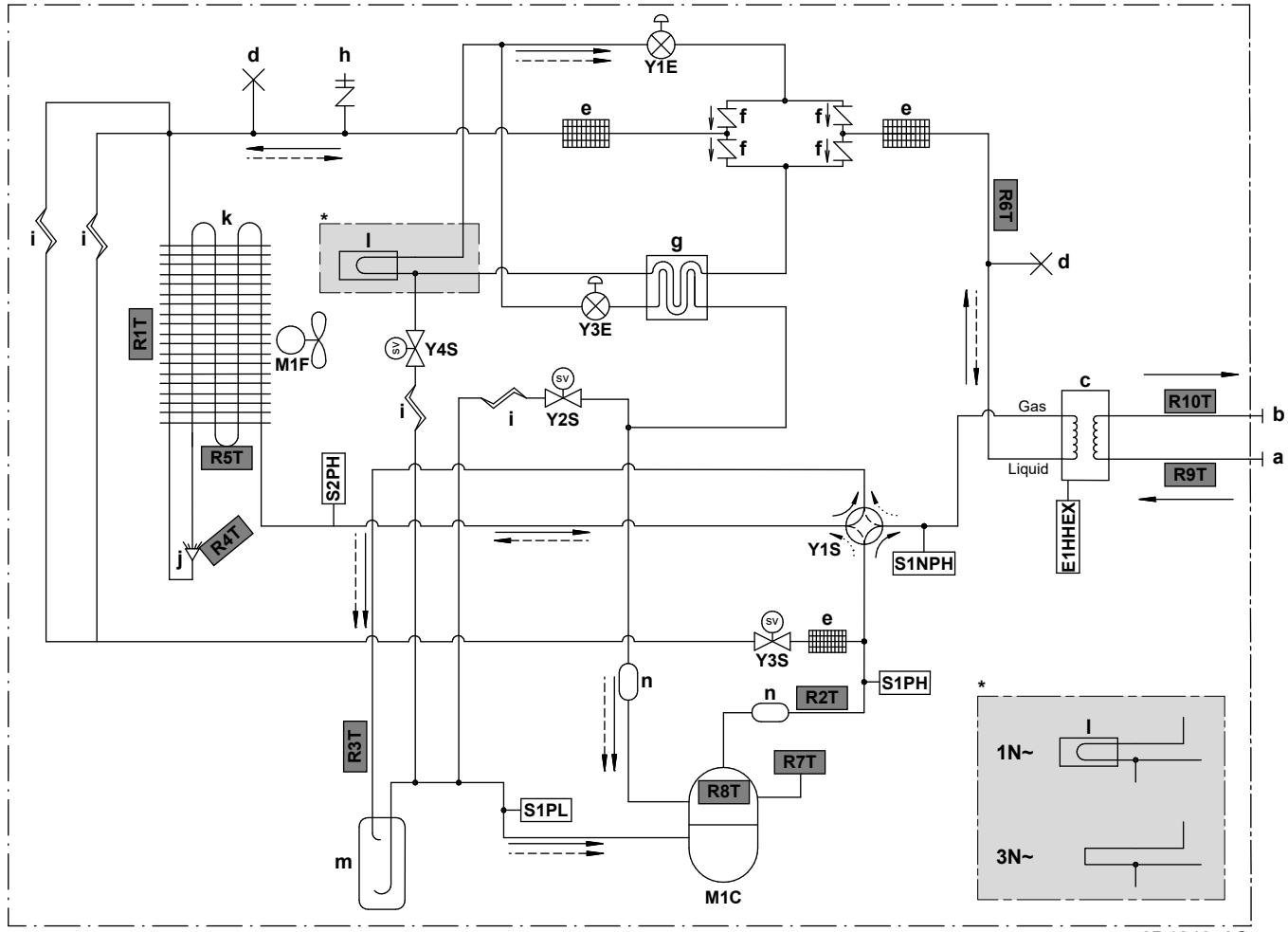
Rotating fan. Before powering ON or servicing the outdoor unit, make sure that the discharge grille covers the fan as protection against a rotating fan. See:

- "4.4 To install the discharge grille" [▶ 11]
- "4.5 To remove the discharge grille, and put the grille in safety position" [▶ 12]

8 Technical data

A subset of the latest technical data is available on the regional Daikin website (publicly accessible). The full set of latest technical data is available on the Daikin Business Portal (authentication required).

8.1 Piping diagram: Outdoor unit



3D124079C

Gas	Gas
Liquid	Liquid
a	Water IN (screw connection, male, 1")
b	Water OUT (screw connection, male, 1")
c	Plate heat exchanger
d	Pinched pipe
e	Refrigerant filter
f	One-way valve
g	Economiser heat exchanger
h	Service port 5/16" flare
i	Capillary tube
j	Distributor
k	Air heat exchanger
l	PCB cooling
m	Accumulator
n	Muffler
E1HHEX	Plate heat exchanger heater
M1C	Compressor
M1F	Fan motor
S1PH	High pressure switch (5.6 MPa)
S2PH	High pressure switch (4.17 MPa)
S1PL	Low pressure switch
S1NPH	High pressure sensor
Y1E	Electronic expansion valve (main)
Y3E	Electronic expansion valve (injection)
Y1S	Solenoid valve (4-way valve)
Y2S	Solenoid valve (low pressure bypass)
Y3S	Solenoid valve (hot gas bypass)
Y4S	Solenoid valve (liquid injection)

Thermistors:	
R1T	Outdoor air
R2T	Compressor discharge
R3T	Compressor suction
R4T	Air heat exchanger, distributor
R5T	Air heat exchanger, middle
R6T	Refrigerant liquid
R7T	Compressor shell
R8T	Compressor port
R9T	Entering water
R10T	Leaving water

Refrigerant flow:
 — Heating
 - - - Cooling

8 Technical data

8.2 Wiring diagram: Outdoor unit

The wiring diagram is delivered with the unit, located at the inside of the switch box cover.

English	Translation
Electronic component assembly	Electronic component assembly
Front side view	Front side view
Indoor	Indoor
OFF	OFF
ON	ON
Outdoor	Outdoor
Position of compressor terminal	Position of compressor terminal
Position of elements	Position of elements
Rear side view	(only for W1 models) Rear side view
Right side view	Right side view
See note ***	See note ***

Notes:

1	Symbols:
L	Live
N	Neutral
	Protective earth
	Noiseless earth
	Field wiring
	Option
	Terminal strip
	Terminal
	Connector
-•-	Connection
2	Colours:
BLK	Black
RED	Red
BLU	Blue
WHT	White
GRN	Green
YLW	Yellow
PNK	Pink
ORG	Orange
GRY	Grey
BRN	Brown
3	This wiring diagram applies only to the outdoor unit.
4	When operating, do not short-circuit protective devices S1PH, S2PH and S1PL.
5	Refer to the combination table and the option manual for how to connect the wiring to X6A, X41A and X2M.
6	The factory setting of all switches is OFF, do not change the setting of the selector switch (DS1).
7	(only for W1 models) Ferrite core Z8C consists of 2 separate core parts.

Legend in case of V3 models:

A1P	Printed circuit board (main)
A2P	Printed circuit board (noise filter)
A3P	Printed circuit board (leakage current)
A4P	Printed circuit board (ACS)
A5P	Printed circuit board (flash)

BS1~BS4 (A1P)	Push button switch
C1~C4 (A1P, A2P)	Capacitor
DS1 (A1P)	DIP switch
E1H	Drain tube heater (field supply)
E1HHEX~E3HHEX	Plate heat exchanger heaters
F1U	Field fuse (field supply)
F1U~F4U (A2P)	Fuse
F6U (A1P)	Fuse (T 5.0 A / 250 V)
H1P~H7P (A1P)	Light-emitting diode (service monitor is orange)
HAP (A1P)	Light-emitting diode (service monitor is green)
K1R (A1P)	Magnetic relay (Y1S)
K1R (A4P)	Magnetic relay (E1HHEX~E3HHEX)
K2R (A1P)	Magnetic relay (Y2S)
K2R (A4P)	Magnetic relay (E1H)
K3R (A1P)	Magnetic relay (Y3S)
K4R (A1P)	Magnetic relay (E1HC)
K10R (A1P)	Magnetic relay
K11M (A1P)	Magnetic contactor
K13R~K15R (A1P, A2P)	Magnetic relay
L1R~L3R (A1P)	Reactor
M1C	Compressor motor
M1F	Fan motor
PS (A1P)	Switching power supply
Q1DI	Earth leakage circuit breaker (30 mA) (field supply)
R1~R5 (A1P, A2P)	Resistor
R1T	Thermistor (outdoor air)
R2T	Thermistor (compressor discharge)
R3T	Thermistor (compressor suction)
R4T	Thermistor (air heat exchanger, distributor)
R5T	Thermistor (air heat exchanger, middle)
R6T	Thermistor (refrigerant liquid)
R7T	Thermistor (compressor shell)
R8T	Thermistor (compressor port)
R9T	Thermistor (entering water)
R10T	Thermistor (leaving water)
R11T	Thermistor (fin)
RC (A2P)	Signal receiver circuit
S1NPH	High pressure sensor
S1PH, S2PH	High pressure switch
S1PL	Low pressure switch
T1A	Current transfo
TC (A2P)	Signal transmission circuit
V1D~V4D (A1P)	Diode
V1R (A1P)	IGBT power module
V2R (A1P)	Diode module
V1T~V3T (A1P)	Insulated Gate Bipolar Transistor (IGBT)
X1M, X2M	Terminal strip
Y1E	Electronic expansion valve (main)
Y3E	Electronic expansion valve (injection)
Y1S	Solenoid valve (4-way valve)

Y2S	Solenoid valve (low pressure bypass)
Y3S	Solenoid valve (hot gas bypass)
Y4S	Solenoid valve (liquid injection)
Z1C~Z11C	Noise filter (ferrite core)
Z1F~Z6F (A1P, A2P)	Noise filter

Legend in case of W1 models:

A1P	Printed circuit board (main)
A2P	Printed circuit board (noise filter)
A3P	Printed circuit board (leakage current)
A4P	Printed circuit board (ACS)
A5P	Printed circuit board (inverter)
BS1~BS4 (A1P)	Push button switch
C1~C3 (A2P)	Capacitor
DS1 (A1P)	DIP switch
E1H	Drain tube heater (field supply)
E1HHEX	Plate heat exchanger heater
F1U	Field fuse (field supply)
F1U~F7U (A1P, A2P)	Fuse
H1P~H7P (A1P)	Light-emitting diode (service monitor is orange)
HAP (A1P, A2P)	Light-emitting diode (service monitor is green)
K1R (A1P)	Magnetic relay (Y1S)
K1R (A2P)	Magnetic relay
K1R (A4P)	Magnetic relay (E1HHEX)
K2R (A1P)	Magnetic relay (Y2S)
K2R (A4P)	Magnetic relay (E1H)
K3R (A1P)	Magnetic relay (Y3S)
K4R (A1P)	Magnetic relay (E1HC)
K2M, K11M (A2P)	Magnetic contactor
L1R~L4R	Reactor
M1C	Compressor motor
M1F	Fan motor
PS (A2P)	Switching power supply
Q1DI	Earth leakage circuit breaker (30 mA) (field supply)
R1, R2 (A2P)	Resistor
R1T	Thermistor (outdoor air)
R2T	Thermistor (compressor discharge)
R3T	Thermistor (compressor suction)
R4T	Thermistor (air heat exchanger, distributor)
R5T	Thermistor (air heat exchanger, middle)
R6T	Thermistor (refrigerant liquid)
R7T	Thermistor (compressor shell)
R8T	Thermistor (compressor port)
R9T	Thermistor (entering water)
R10T	Thermistor (leaving water)
R11T	Thermistor (fin)
S1NPH	High pressure sensor
S1PH, S2PH	High pressure switch
S1PL	Low pressure switch
T1A	Current transfo
V1R, V2R (A2P)	IGBT power module
V3R (A2P)	Diode module
X1M, X2M	Terminal strip

Y1E	Electronic expansion valve (main)
Y3E	Electronic expansion valve (injection)
Y1S	Solenoid valve (4-way valve)
Y2S	Solenoid valve (low pressure bypass)
Y3S	Solenoid valve (hot gas bypass)
Y4S	Solenoid valve (liquid injection)
Z1C~Z10C	Noise filter (ferrite core)
Z1F~Z4F (A1P, A3P)	Noise filter

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Zandvoordestraat 300, B-8400 Oostende, Belgium

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